

THE CAUSE, PREVENTION AND CURE OF TUBERCULOSIS

A Preventable and Curable Disease

[Printed by authority of the State of Illinois.]

IMPORTANT FACTS ABOUT TUBERCULOSIS.

It is one of the most common of diseases. One-eighth of all persons die from it and from 70 to 80 per cent of persons are infected at some time of life.

One-third of all deaths between 14 and 40 years of age are due to it. It kills more persons than the other communicable diseases combined.

It is caused by a germ and is spread usually through careless coughing and spitting.

It is not hereditary. Children of consumptives are often infected, however. Children are very susceptible.

The germs do not cause disease at once. They may lie in the body for years.

It is made active by such diseases as measles or influenza and is more apt to develop among those who live badly or who are engaged in dusty trades.

It is curable if recognized early. The most important thing is early diagnosis and right treatment at the right time.

The first signs of the disease are weariness, loss of appetite, loss of weight, slight fever, cough, shortness of breath, indigestion, hoarseness, nervousness.

In its early stages, the disease can be detected only by most careful examination by a competent doctor.

The patient who waits until he is actually sick usually loses his chance of getting well.

There is no medicine, vaccine or tuberculin that will cure it. Climate is not a cure. Modern treatment consists of rest, out-door life, nourishing food, medical supervision, good nursing and rigid discipline.

These are best found in a sanatorium where the patient is not only put on his feet; but is taught how to live.

It is slow in developing and slow in cure. The three months after all symptoms have disappeared are most important.

It is a communicable disease and must be reported by the doctor or householder to the local health authorities.

Circular Issued by the
Illinois State Department of Public Health

STATE OF ILLINOIS

Department of Public Health

C. ST. CLAIR DRAKE, M. D. *Director*

RULES AND REGULATIONS FOR THE CONTROL OF TUBERCULOSIS.

[Approved and in force August 1, 1917. Revised and in force June 1, 1918.]

(ABSTRACT.)

In order to preserve and improve the public health, the Department of Public Health has made and promulgated rules and regulations (of which the following is an abstract) for the control, suppression and eradication of pulmonary tuberculosis.

(1) Pulmonary tuberculosis is declared a contagious or communicable disease dangerous to the public health.

(2) Physicians, attendants, parents, householders and other persons are required to report any known or suspected case of pulmonary tuberculosis to the local health authorities.

(3) Physicians are required to advise the members of the family and the patient as to the nature of the disease and the means of avoiding infection.

(4) It is the duty of the local health officer to visit the home of the patient to see that reasonable precautions for the prevention of infection are being observed and (5) to cause the examination of the sputum of the patient from time to time to determine if the case is an "open case".

(6) An "open case" is defined as one showing active evidence of disease, having persistent cough and which produces sputum containing tubercle bacilli. All cases are to be regarded as "open cases" until three specimens, collected within three weeks, are found negative by the health officer or in a public laboratory.

(7) No "open case" of tuberculosis shall occupy the same bedchamber with any well person except one acting as a nurse under the direction of a physician. The sputum of the consumptive must be properly destroyed and the patient should cover his mouth with cloth or paper when coughing.

(8) If the consumptive does not take necessary precautions to protect others, he shall be isolated.

(9) No "open case" shall be removed from the premises except with permission from the local or State health authorities, and no patient shall be removed from one health jurisdiction to another without permission of health officers of the place from which taken and to which removed and the approval of the State Health Department.

(10) Teachers, children and others with open tuberculosis shall be excluded from school buildings.

(11) The sale of milk, groceries, meats and other foods from premises on which there is an "open case" is prohibited. This may be modified by the local health officer, after personal inspection, under certain circumstances. An "open case" is not permitted to handle, prepare or sell foods. (See Rules.*)

(12) No person suffering from open tuberculosis shall act as a nurse for children or sick persons.

(13) It is the duty of owners and agents to notify the health officer of the removal or death of any consumptive and the property must not be sold or rented until properly disinfected.

(14) Defines proper methods of disinfection.

(15) Provides a penalty of a fine of not to exceed \$200.00 or imprisonment in the county jail not to exceed six months, or both, for violation of these rules by health officers, physicians or other persons.

(16) Repeals any conflicting rules.

* Health officers, physicians and others are urged to familiarize themselves with the complete "Rules and Regulations for the Control of Tuberculosis", copies of which will be forwarded without cost on application to the State Department of Public Health, Springfield, Illinois. Health officers should procure a sufficient number of copies of these Rules so that they may be placed in the hands of all physicians in their communities.

THE CAUSE, PREVENTION AND CURE OF TUBERCULOSIS, OR CONSUMPTION.

TUBERCULOSIS is one of the most common of all diseases. It causes one-eighth of all deaths. In one year, in the United States, it causes more deaths than occurred during the Civil War. It kills men and women in the very prime of life. One-third of all deaths between the ages of 14 and 40 are due to this disease.

In times past the cause of tuberculosis was shrouded in mystery. We now know that it is caused by a germ called the tubercle bacillus, discovered by Koch in 1882. This germ is found by millions in the sputum of consumptives and the disease is carried to others through this sputum by means of spitting or coughing.

These germs are killed by sunlight and fresh air. They may also be destroyed with strong soaps and such disinfectants as 5 per cent solution of carbolic acid. Such gaseous disinfectants as sulphur and formaldehyde will not destroy them in infected rooms. The germs live and remain active for a long time in unventilated rooms, where they are protected from sunlight and fresh air.

Tuberculosis may infect any part of the body; but the most common form of the disease is that of the lungs known as "consumption" or "phthisis." The disease may occur in the throat or bowels; but this is usually connected with tuberculosis of the lungs.

The glands may be infected, especially the glands of the neck. When severe, this is often called "scrofula." Tuberculous glands are usually enlarged, but may not be so large as glands diseased from other causes. The disease may also involve the kidneys, eyes, ears or skin.

On account of the fact that tuberculosis may affect any part of the body and appear in many different forms, it is called by many different names. All of these are tuberculosis and all are caused by the germs of tuberculosis. These terms include: "consumption," "phthisis," "Potts' disease," "white swelling," "fibroid phthisis," "lupus," "scrofula," "lung cavity," "caries of the spine," "lumbar abscess," "necrosis of the spine," "psoas abscess," "cold abscess," "struma," etc.

Other terms which probably mean tuberculosis are: "spinal disease," "miners' asthma," "chronic bronchitis," "chronic grippe," "complication of diseases," "catarrhal fever," "winter cough," "glandular fever," "scrofulous bronchitis," "lung abscess," "mesenteric fever," etc. Any of these diseases should be looked upon with suspicion. They probably indicate tuberculosis.

The germs of tuberculosis always enter the body in one of two ways: (a) Breathed with the air, or (b) swallowed with the food. Infection may take place through a wound in the skin, but this is very rare. Ninety

per cent of cases are caused by breathing in the germs that are spit or coughed out by consumptives.

Germs may be swallowed with the food when tuberculous people are permitted to sell, handle, cook or serve food, or the food may be contaminated by germ-laden dust, especially when the food is exposed to street dust or where ordinary dry sweeping is practiced.

Children acquire germs of tuberculosis by putting pencils and other contaminated articles in their mouths. The common drinking cup is so notorious in transmitting disease that its use has been prohibited in public places in Illinois and in most other States.

The milk of tuberculous cows or the products made from such milk may be the means of transmitting tuberculosis. Children are infected in this way more than adults. While infection from milk is relatively rare, it is a very real source of danger.

Infection from milk and milk products may be avoided by using only milk from cows proven free from tuberculosis by the tuberculin test or by pasteurizing all milk before it is used. Pasteurizing consists in heating milk to 145 degrees F., maintaining that temperature for twenty minutes and cooling with ice.

Tuberculosis is not hereditary. In certain rare instances the child of a consumptive mother is born infected, but such children die in a very short time.

The child of the consumptive, however, may be born weak and puny and susceptible to disease. It may be especially susceptible to tuberculosis. As a rule, such children are infected shortly after birth through contact with the tuberculous parent or through living in the infected house. It is almost impossible for the child to live with the tuberculous mother without being infected. The disease may not show itself at once. It may not develop for many years.

If, on the other hand, the child is removed from the tuberculous parent immediately after birth, infection does not occur. On this fact is based the present movement to establish "preventoria," where children of the tuberculous are taken and saved from disease.

The practical lessons to be learned from these facts are: Children must be kept from contact with tuberculous parents. They should be raised with the utmost care to build up their health and to increase their resistance to disease. Such children should live almost constantly in the open air.

Under no circumstances should the tuberculous mother be permitted to nurse her child. This is necessary for the health of the mother as well as for the protection of the infant.

All children from homes in which there is or has been tuberculosis should be carefully and repeatedly examined by a competent physician for the early detection of the disease.

HOW WE ACQUIRE TUBERCULOSIS.

TUBERCULOSIS is usually spread by the sputum of consumptives. If there was no spitting or careless coughing, there would be very little tuberculosis. The most dangerous spitting is that done in the house. The germs thrive when protected from sunlight and fresh air. Spitting on the sidewalk is chiefly dangerous because the sputum is tracked into the house.

All spitting, however, is dangerous and most spitting is entirely unnecessary. With most men, it is merely a useless and filthy habit.

Coughing and hawking are quite as dangerous as spitting.

SPITTING AND COUGHING. Every time the individual coughs or hawks he emits thousands of minute bubbles of spit which may contain the germs of tuberculosis or other disease. This is easily shown by holding a clean mirror before the mouth when coughing.

All spitting and careless coughing are dangerous, whether the person knows he is tuberculous or not. The disease is very insidious. It is often not recognized until far advanced. Many persons whose sputum contains germs appear to be in good health.

It is probable that tuberculosis is spread to a greater extent by those who do not know they have tuberculosis than by consumptives who, knowing their condition, exercise care in coughing and spitting.

The use of a spittoon does not eliminate the danger of spitting.
SPITTOONS. Place a spittoon that is in use on a piece of white paper and note the sputum that is scattered about it. A spittoon is always a source of danger where there are any flies.

Tuberculosis is infectious. No cases can develop unless the germs are acquired from some person suffering from the disease. Tuberculosis is not contagious, however, in the sense that scarlet fever and smallpox are.

With so many consumptives, known and unknown, about us we all probably inhale or swallow tuberculosis germs from time to time. For the person living under good conditions, with ample sunlight, abundant fresh air and immaculate cleanliness, the danger of infection is reduced to the minimum, yet no class of people are immune. Infection of physicians, nurses or other employees of tuberculosis hospitals is so rare as to be practically unknown. This is because care is always exercised in such institutions.

Bad living conditions predispose to tuberculosis. Bad housing with poor ventilation, dark rooms, faulty sanitary conditions, and especially where these are associated with overcrowding, are fertile fields for the development of the disease. The famous "long block," in the slum district of New York, indicates the close relationship between bad housing and tuberculosis.

The careful consumptive, who is under the constant guidance of a good physician, and especially one who has had the advantage of sanatorium training, is not a source of danger.

Many tuberculous persons who do not cough and who produce no sputum are not spreaders of the disease. The chief danger is

from the "open case" producing sputum containing germs. Every person having tuberculous infection, however, and every person who coughs should be under the constant supervision of a physician and should have the sputum examined at frequent intervals. Germs may appear at any time.

When germs of tuberculosis enter the body, one of three things may happen: (1) The germs are destroyed and do no harm; or (2) they remain inactive in the tissues of the body for a long period of time; or (3) they may set up immediate acute disease.

Germs may lie dormant in the body for years without producing disease. So long as we are in good health they may do no harm. When our strength is reduced from any cause, however, the disease may develop without our having gotten a new infection from outside. The disease is produced by the germs we have carried in our own bodies.

"It has been proven beyond doubt that almost every adult has germs of tuberculosis somewhere in the body and that by the time nearly every child reaches his fifteenth year he has been infected with the organism. The fact that most of us are well and strong and that we are quite unaware of the presence of this most unwelcome visitor is the best evidence we have of the durability of this disease."

Hence, we must bear in mind that "tuberculous infection" is a very common thing. We must remember, however, that there is a great difference between "tuberculous infection" and "tuberculous disease." We must also remember that not all persons having tuberculous disease are "consumptives" or sources of danger.

The person who has "tuberculous infection" may feel and appear to be perfectly well. Tuberculous infection, however, may readily develop into tuberculous disease or consumption.

After infection is acquired—and, perhaps, years after—any condition which reduces the general health or strength may bring about acute and active disease. Influenza and measles are notorious forerunners of the disease. This should be especially borne in mind after the general influenza epidemic of 1918.

Frequent childbirth in women, great mental worry, grief and physical strain and all bad habits and excesses may bring about active tuberculosis. General diseases, such as syphilis and diabetes, may predispose to it. Typhoid fever doubtless reduces the strength and makes the individual more subject to infection; but some cases of so-called typhoid fever, pleurisy, nervous disease and stomach trouble are the early signs of actual tuberculosis rather than its forerunners.

Repeated and neglected "colds" not only pave the way for tuberculosis, but often what seem to be repeated "colds" are the evidences of tuberculosis itself. Adenoids and infected tonsils may serve as the portals of infection and also may decrease the ability of the individual to breathe properly, materially affecting the general health.

Osler says: "Defective teeth may cause more physical deterioration than does alcohol." And Landouzy adds: "Alcohol makes the bed for tuberculosis."

Certain trades and occupations seem to predispose to tuberculosis. These include the dusty trades—**DUSTY TRADES.** stonecutters, knifegrinders, potters, dyers, cigarmakers, etc. Printers, dressmakers and bakers are often victims of the disease. No person in poor health, or in whom there is the slightest suspicion of tuberculosis, should accept employment in a dusty trade or a trade in which there is close confinement in dark or unventilated quarters.

General ill health and bad methods of living are almost as much the cause of tuberculosis as the germ itself. However, regardless of the general health, no case of tuberculosis can occur without the presence of the tubercle bacillus.

Physical fatigue is a decided factor in producing tuberculosis. It is astonishing how often athletes and professional **PHYSICAL FATIGUE.** strong men have died from this disease. Physical exhaustion, even though in the open air, is distinctly harmful. This explains, to a certain extent, the frightful mortality among those who have carried out the thoughtless advice, "Go west and rough it." No more unfortunate direction could possibly be given to the majority of consumptives.

While everything should be done to avoid infection, we must guard against silly and hysterical fear of the **FEAR OF TUBERCULOSIS.** disease. A great injustice has been done careful consumptives, who are a source of danger to no one, by this form of hysteria. This unwarranted fear has driven them from employment and has made them outcasts. It is neither sane nor humane.

EARLY SIGNS OF TUBERCULOSIS.

IN TIMES PAST tuberculosis was regarded as a fatal and incurable disease. This was because it was rarely recognized until it had become far advanced. Advanced tuberculosis is still frightfully fatal.

Within recent years, however, the methods of diagnosis have been so improved that the competent physician, if he will give the necessary time and skill to it, can detect the disease when it is entirely curable. With all of this new knowledge, however, the diagnosis of tuberculosis still requires the utmost care on the part of the physician. When tuberculosis is easy to diagnose, it is usually far advanced and incurable.

During the examination necessary for the detection of early tuberculosis the patient must in every case be **EARLY DIAGNOSIS.** stripped to the waist. The first and only evidence of the disease may be found in the back. There are many cases of tuberculosis in which even the most thorough and physical examination will disclose nothing. Consequently, in addition to a careful examination of the bare chest and back, it may be necessary

to employ the tuberculin test, to keep the patient under constant observation in bed several days, to make X-ray examinations and to repeatedly examine the sputum. Until all of these things are done the physician is not justified in saying the patient is NOT tuberculous.

The presence of germs in the sputum means unquestioned tuberculosis. The absence of germs, even after repeated examination, means nothing. In fact, in very early cases of tuberculosis of the lungs germs are found in the sputum. In other rather advanced cases the sputum contains no germs. In tuberculosis of other parts of the body the sputum shows nothing.*

The victim of early tuberculosis may not even suspect he is ill. There may be no symptoms to cause him to be concerned about his lungs. There are certain signs which appear very rarely in the disease which should prompt the intelligent person to seek examination by a thoroughly competent physician. They are:

1. WEARINESS—Weariness is one of the earliest and commonest signs of the disease, especially important when it follows measles, influenza or physical or mental strain.

2. LOSS OF APPETITE—Loss of appetite or “finicky” appetite, often associated with a dislike for such foods as butter, meats and fats.

3. LOSS OF WEIGHT—Loss of weight, as not otherwise accounted for, should always arouse suspicion.

4. FEVER—Very slight fever early in the afternoon or a temperature below normal in the morning. Any daily variation of more than one degree is significant.

5. COUGH—The disease may become very far advanced without cough. It may amount to merely “clearing the throat.” There may or may not be sputum. Any cough lasting more than two or three weeks, however slight, should arouse suspicion. The cough rarely “comes from the throat.” So called “stomach cough” is often tuberculous.

6. SHORTNESS OF BREATH—Shortness of breath, especially on slight exertion, may be an early symptom.

7. HOARSENESS—Continued hoarseness or loss of voice merit serious attention.

8. INDIGESTION—One of the most common and earliest symptoms. A large percentage of cases of tuberculosis are first regarded as “stomach trouble.” So called “nervous dyspepsia” should be looked upon with suspicion.

9. SPITTING BLOOD—Hemorrhage from the mouth, however slight, is rarely due to any other condition than tuberculosis

* The State Department of Public Health, at its laboratory in Springfield, examines specimens of sputum for the diagnosis of tuberculosis, without charge. Specimens should be sent only in the approved mailing cases which may be obtained without cost from the laboratory or from the many State Department of Health stations throughout the State. To avoid error and misleading results, it is wiser to have the specimen collected and mailed by the physician.

of the lungs. It is possible for the blood to come from the nose, teeth, gums or throat, but very improbable. In case of any hemorrhage, even slightly streaked sputum, the physician should be consulted.

10. PAIN IN THE CHEST—Soreness in the chest and so-called “pleurisy pains” are common early in the disease. Real pleurisy is frequently tuberculous. Moist pleurisy is almost invariably tuberculous.

11. NERVOUSNESS—Nervousness is very characteristic of the disease. Many cases of so-called “nervous prostration” are due to tuberculosis.

No one of the above symptoms means tuberculosis, but any one or more of them should cause the intelligent man to seek the advice of a thoroughly competent physician. He should not be satisfied with a superficial examination.

A proper examination to detect early tuberculosis requires from one-half hour to an hour and demands the utmost **PHYSICAL EXAMINATION.** care on the part of the physician. In most instances the physician will desire to make a careful case history. The patient must recognize that a careless examination is worse than no examination at all and should readily give ample time for a thorough study of his case.

So long as there is a vestige of hope of recovery neither the physician nor the family are justified in **ANNOUNCING THE DIAGNOSIS.** keeping the true diagnosis from the patient. To do this may remove his one chance of getting well. The shock of knowing the truth passes quickly and does the patient no harm. No patient can successfully carry out the cure of tuberculosis without knowing the exact nature of his disease.

In case the patient is unable to pay for a thorough examination he should apply to the tuberculosis dispensary for free examination, if there is one in his vicinity. Provisions have already been made through the county tuberculosis sanitarium act for the establishment of free tuberculosis dispensaries in over forty counties of Illinois. A list of dispensaries now in operation or in contemplation will be found in an early number of **HEALTH NEWS.** If there is no tuberculosis dispensary in the community, assistance may be obtained through the local Tuberculosis Association or League.

TUBERCULOSIS DISPENSARIES. **Note**—A complete list of free tuberculosis dispensaries in Illinois will be found on page 16 of this circular. Free dispensaries will also be established, in connection with sanatoria and nursing service, during the next two years, in the following counties which voted favorably on the county tuberculosis sanitarium proposition at the November election, 1918: Boone, Bureau, Christian, Clark, Clay, DeWitt, Coles, Crawford, DeKalb, Douglas, Fulton, Grundy, Henry, Jackson, Jefferson, Kane, Lee, Logan, McDonough, Macon, Madison, Marion, Piatt, Pike, Randolph, Scott, Stephenson, Tazewell, Vermilion, Whiteside, Will, Winnebago and Woodford. Sanatoria should be constructed in many of these counties by 1920. These institutions will be free to the residents of the county regardless of their financial condition.

Copies of the County Tuberculosis Sanitarium Law will be supplied upon request by the State Department of Public Health.

THE CURE OF TUBERCULOSIS.

TUBERCULOSIS IS A CURABLE DISEASE; if recognized early and properly treated, 75 to 80 per cent of consumptives will recover. The most important thing in treatment is the early diagnosis. The treatment itself has been greatly improved, however, in the past few years. There is no secret or mystery about the modern treatment of this disease. Secret remedies are usually frauds and are not tolerated by reputable doctors. We know of no remedy or medicine out of a bottle that will cure tuberculosis.* No specific cure, like antitoxin in diphtheria, has been found. There is no certain preventive agent for tuberculosis like vaccination in smallpox.

Before the cause of tuberculosis was understood scores of remedies were suggested for its cure. Whiskey, cod-liver oil, and creosote were frequently used and the change of climate was advised in all stages. Otis says: "Multitudes were sent away to die far from home and the nauseous cod-liver oil destroyed the digestion of not a few." Certain drugs are still used and are of value in the treatment of the symptoms and complications of the disease, but they are in no sense a cure.

The modern treatment of tuberculosis, accepted by all authorities the world over, consists of the general building up of the health of the patient so he can work out his own recovery. The aim is to aid nature make the cure. The treatment is made up of fresh air, good food, complete rest, constant medical supervision, skillful nursing, rigid discipline, cheerful surroundings and happiness.

Simple as this may seem, it involves a great deal of self-discipline which the patient can rarely exercise alone. In no other disease is the supervision of a competent physician more necessary. In no other disease does the conduct of the patient himself have so much to do with recovery. Tuberculosis is curable; but it is a man-sized job to get well. It is a serious disease and the man who would recover must make getting well his chief business.

The patient must first admit to himself unreservedly that he has tuberculosis. He will not be faithful in taking the cure unless he is convinced of this fact. If he is not faithful he will fail. If there is any doubt in the patient's mind as to the diagnosis, he should consult a second physician, always selecting the most competent physician in the community and one expert in the diagnosis of tuberculosis if available. He should bear in mind that ten cases

* The facts about many patent medicines, consumption cures and medical institutes have been made public during the past few years. "The Great American Fraud," a series of articles contributed to Collier's Weekly by Samuel Hopkins Adams, has been reprinted in pamphlet form by the American Medical Association, Chicago, and is sold at 15 cents a copy.

A pamphlet on "Consumption Cure Fakes" has also been issued by the American Medical Association and is offered to the public at 10 cents a copy. This is a book of 140 pages and exposes the following "cures": Nature's Creation' Eckman's Alternative, Aiesol (Lloyd), the Bensonizer treatment, Brominodin, Compound, the J. Lawrence Hill treatment, Hoff's Consumption Cure, Lung Germine, Oxidase, Oleozone, Hydrocine, Pulmonol, Sartolin, Tubercleicide, Tuberculoids, Virgin Oil of Pine, the Wilson Consumptive Cure, Yonkerman's Tuberculozyne and others. Persons who consider using patent medicines or consumption "cures" will do well to read these pamphlets that they may know both sides of the question.

of tuberculosis are overlooked to one that is erroneously diagnosed as tuberculosis.

The family of the patient should be fully advised as to the nature of his disease. They are entitled to this knowledge for their own protection. No one can successfully overcome tuberculosis in secret. Getting well is more important than what your friends or neighbors may think about your illness.

If possible, the patient should spend some time in a well conducted sanatorium, where he will receive proper **SANATORIUM CARE.** care, and especially where he will be taught how to live and how to work out his cure at home without danger to others. In case this can not be done, the patient, if capable of exercising self-discipline, can "take the cure" at home. Home treatment is much more successful, however, if the patient can have even a few weeks or months of sanatorium training.

There is a general feeling that tuberculosis sanatoria are depressing. This is not true. Well conducted sanatoria are especially cheerful—more so than the average general hospital. Other patients are a source of encouragement and inspiration. In the sanatorium the patient loses sight of the common dread of the disease which, in the present misguided state of public opinion, is the source of untold unhappiness to the consumptive.

Illinois has no State tuberculosis sanatorium. Under the provisions of a State law, provisions have been made for sanatoria free to the rich and poor alike, in about forty Illinois counties. There are several excellent private sanatoria conducted at moderate rates in Illinois. A list of the existing sanatoria and those in process of establishment will be found in our October number.

Complete physical and mental rest is perhaps the most important factor in the treatment of tuberculosis. As a rule, rest within doors would be better than exercise out of doors. Rest in the worst of climates would be better than exercise in the best of climates. The patient must have absolute rest outdoors when he has fever. This may have to be carried on for months. Exercise should be taken only with the doctor's sanction and under close supervision. Rest is the best cure for the cough, for the loss of appetite, for the fever and for the nervousness of tuberculosis. There is a common fiction that rest in bed causes weakness. This is entirely unfounded.

Living and sleeping out of doors day and night in summer and winter. This is best done on a porch or in a **OUT-OF-DOOR LIFE.** framed cottage, properly screened during the summer months against flies and other insects and so built to give protection against high winds and rain. An east or southeast exposure is desirable. No room ventilated by windows affords as much fresh air as a porch. Unless there is a cross draught from windows opposite from one another, fresh air penetrates only a short distance into a room. Remember that cold air is not necessarily fresh air.

Tents are apt to be damp in rainy weather and very hot in summer weather. As a rule, they are thoroughly unsatisfactory for housing tuberculous patients. If used, they should be thor-

oughly screened in summer and so arranged that the side walls may be constantly raised.

For those who are unable to have sleeping porches, and especially for those living in large cities, the various forms of window tents answer an excellent purpose. These tents are so arranged that the individual, sleeping in his own room, may have his head in the fresh air. There is another type, known as the window cot, which consists of bed enclosed with canvas and attached to the side of the house.

Proper clothing must be provided for out-of-door sleeping and living. This clothing must be ample without being too heavy. Hot water bottles should be used in winter, so that the cover need not be so heavy as to tire the patient. The best and cheapest form of water bottle is the specially designed clay jug known as a "pig."

The clothing worn in the day should not be worn at night. This is especially true of underclothing. The skin can not be kept clean if the same clothing is kept in contact with the body day and night.

The tuberculous patient requires an abundance of well cooked **FOOD.** food. The appetite is usually "finicky" and the food must not only be good, but must be daintily and attractively served. So-called luxuries are absolute necessities for the tuberculous patient. The custom of forcing feeding, and especially of stuffing the patient with milk and eggs, is no longer employed in well conducted sanatoria.

It is unwise to give food between meals, if by so doing the appetite for food is impaired. Excessive feeding, with undue quantities of milk and butter, often leads to disturbed digestion and may impair the chance of recovery.

While the giving of medicine has little to do with the cure of tuberculosis, there is no disease in which the **MEDICAL SUPERVISION.** services of an intelligent physician are more important. Exercise, diet, sleep and all the details of daily life must be constantly supervised. Complications must be anticipated and avoided. The patient must be sympathetically encouraged or repressed according to his changing moods. The doctor who understands tuberculosis and the tuberculous is indispensable to the consumptive. Many of the pathetic failures in home treatment have been due to underestimation of the importance of medical supervision. Simple as it appears, the treatment is difficult to carry out successfully without a physician kept constantly in charge.

Patients who are unable to submit to discipline can rarely attain recovery. There is no disease in which **RIGID DISCIPLINE.** the intelligence and self-control are as essential as in tuberculosis. The treatment is monotonous and prolonged and the highest degree of intelligence and self-control is essential.

Good nursing during the active stage of tuberculosis is very important. In case the patient is unable to **NURSING AND TREATMENT.** go to a sanatorium, the employment, if only for a few weeks, of a trained nurse, especially experienced in

tuberculosis nursing, will be found to be the greatest value. Such a nurse renders invaluable assistance in teaching the patient to care for himself, in teaching the family how to care for the patient and how to prevent infection.

Climate plays a much smaller part in the treatment of tuberculosis than was previously supposed. It is better for the patient to be under proper supervision and care in the worst of climates than to be turned loose unguided in the best climate on earth. Climate alone will not cure tuberculosis. Climatic resorts, where there is much clear weather, and where there are no sudden changes or extremes of temperature, are desirable for those who are able to pay for proper medical care, supervision and treatment under such conditions.

Living expenses in the South or Southwest are generally higher than in Illinois, and business men's associations and other civic bodies in the Southwest warn against the tuberculosis patient coming among them unless provided with ample money to live comfortably for six months or a year. Employment for the invalid is very difficult to obtain and, if he gets work, the consumptive will almost invariably suffer in health through employment. This is true, regardless of the climate he may be in.

Homesickness is a very real obstacle to treatment in far-away climates, and this is particularly true among those who are financially unable to travel and live in comfort. The patient often feels ill and disheartened, for, contrary to the common belief, the curable consumptive is usually depressed. Homesickness, if it exists, will outweigh the benefit of any climate on earth.

Tuberculosis is curable in Illinois. It has been observed that sanatoria in Massachusetts—which has been called the "battle ground of the elements" on account of its variable climatic conditions—have had as large a percentage of cures as those of the Southwest. It is doubtful if any institutions in the United States show a more enviable record of recoveries than some of those in Illinois. Contrary to general belief, the difficulty in out-of-door living in Illinois is not experienced in the winter and early spring. The patient usually improves most in cold weather. The heat of summer is the time of greatest difficulty and of least improvement.

There is no danger of "taking cold" in out-of-door living in any climate. If the patient is taught how to live and is properly prepared for bad weather, rains, fogs, snow and zero weather need not be feared. Night air is better than day air. There are no "draughts" out-of-doors.

Tuberculin and vaccines are valuable in certain selected cases if employed by physicians who are fully informed as to their proper use. Tuberculin and vaccines, however, will not cure tuberculosis. They can not take the place of the treatment outlined above. There is no question but that tuberculin has done a great deal of harm when improperly used. It should never be employed when the patient has fever or when the disease is in any way active.

TREATMENT IN ILLINOIS.

TUBERCULIN AND VACCINES.

CARE OF THE CONSUMPTIVE.

OUT-OF-DOOR CARE not only benefits the patient, but protects those about him from infection. The house may be readily infected, but fresh air and sunshine are the natural enemies of the germs of this disease. It is wise to have the patient out of doors as much as possible.

If the patient is to be cared for indoors, as is often necessary with far advanced cases in bad weather, rugs, carpets, and unnecessary furniture should be removed from the room and the walls should be painted, so that both walls and floors may be cleansed thoroughly at frequent intervals.

If intelligent care is given and all precautions observed, there is very **DANGER** little danger in nursing the consumptive. During the **TO NURSES.** past twenty years there has been no reliable record of the infection of any physician, nurse or other employee of a sanatorium through contact with consumptive patients. That is because care is constantly used. On the other hand, the **careless consumptive is always a source of danger.**

Flies may carry tuberculous infection. It is absolutely unsafe to care **FLIES.** for a consumptive where flies are permitted to come in contact with him. The sleeping porch should be carefully screened and breeding places of flies on the premises should be destroyed or removed.

The patient should be made comfortable in every way. He should not **CLOTHING.** be overdressed. In summer he should wear the lightest possible clothing. He should not be overloaded with blankets and woollens in the fear he will catch cold. There is much less danger catching cold out-of-doors than indoors. In summer, sheets next to the body will be found more comfortable against the body. In the winter, cotton blankets, which may be washed frequently, should be used in place of sheets. Woollen blankets are not easily cleansed and should not come in contact with the body unless especially ordered by the physician. The upper part of the blankets should be protected by a heading of muslin, so that they will not become soiled with the sputum of the patient.

The use of tobacco should be prohibited. Smoking is injurious and **PERSONAL** chewing always a filthy habit, becomes exceedingly danger- **HABITS.** ous in the consumptive on account of the necessary spitting.

The patient should not use whiskey, beer or other alcoholic drinks. The idea that strength is gained through stimulants is unfounded. A man gains no more strength from alcohol than a horse does from a whip.

The patient should be smooth shaven. No person who coughs or produces sputum can be clean if he wears a beard or mustache.

The disposal of the sputum is a matter of the greatest importance, **DISPOSAL** for the protection of others. Spitting on the ground **OF SPUTUM.** or in a cuspidor must be forbidden. When the patient is at home he should be provided with a large number of paper napkins and should have a glazed paper bag fastened under his bed or chair. All sputum should be deposited in the paper napkin and the paper napkin placed immediately in the bag. At frequent intervals the bag and napkins should be burned. The sputum should be received in the paper napkin held close to the lips and all sputum should be wiped from the lips. The patient should not spit into the napkin.

If the fingers are soiled in the least in handling the napkin or sputum they should be washed at once with soap and water. The patient should always wash his hands before eating. If any of the sputum should drop on the floor or elsewhere it should be wiped up with a cloth saturated with five per cent carbolic acid or some other approved disinfectant and the cloth should then be burned.

Sputum cups of many designs are to be found on the market. The best of these consist of cardboard cups fitted into wire or metal frames, the cup to be used but once and then burned. The best of sputum cups are open to the objection that they may be blown over, especially out-of-doors, that they require more or less handling after being used, and that they are accessible to flies and other insects. Metal and china sputum

cups, which are not destroyed by fire and require cleansing, are open to very serious objection. No sputum cup is as sanitary or satisfactory as the use of paper napkins and bags.

For use on the streets, there have been devised a number of burnable sputum flasks which are easily carried, which are practically non-leakable and which can be used without attracting attention. The tuberculous patient should not spit anywhere. He should make provision morning, noon and night for the proper disposal of his sputum.

Coughing and hawking are as dangerous as spitting. The patient **COUGHING** should be trained to place a paper napkin over his **AND HAWKING.** mouth when coughing or hawking. Coughing is largely a matter of habit. The more the patient coughs, the more his throat is irritated and the more he has to cough. In well conducted sanatoria it has been found that patients can suppress at least fifty per cent of coughing and greatly to their own benefit.

The tuberculous patient should have his own silverware, glassware **CHINA** and china, and this should be disinfected in boiling water **AND LINENS.** and with strong soap after each meal. The patient should have his own napkins and his own towels. Paper napkins and paper towels are much better and more satisfactory than linen. The tuberculous patient who is producing sputum should not use cotton or linen handkerchiefs. Paper napkins answer the purpose better. The pocket handkerchief should be regarded by all persons as a source of danger at all times. The waving of handkerchiefs in public, as is done in the so-called "chautauqua salute," is fraught with the utmost danger. This custom should be absolutely prohibited.

The attendant or nurse of the tuberculous patient should be selected **TUBERCULOSIS** with the utmost care. It requires more skill and intel- **NURSES.** ligence to properly handle consumptives than any other class of patients. The nurse must combine the skill of trained nurse with the knowledge of the teacher and the intelligent precaution which will safeguard both herself and all persons in contact with the patient.

DIRECTORY OF TUBERCULOSIS AGENCIES, PUBLIC AND PRIVATE SAN- ATORIA AND FREE TUBERCULOSIS DISPENSARIES IN ILLINOIS.

TUBERCULOSIS SANATORIA.

Public Sanatoria.

See note foot of page 9.

THE ILLINOIS TUBERCULOSIS ASSOCIATION.—Maintains central offices in Springfield with local tuberculosis associations in various sections of the State. An educational organization assisting local communities in sanatorium campaigns, in establishing dispensaries and visiting nurse service, in health activities among school children and in general educational campaigns. Dr. George Thomas Palmer, President; Walter D. Thurber, Executive Secretary.

ADAMS COUNTY.—**THE ADAMS COUNTY TUBERCULOSIS SANITARIUM,** Quincy. Under construction and free to residents of the county. For information, address Dr. Grant Irwin, Quincy.

CHAMPAIGN COUNTY.—**THE CHAMPAIGN COUNTY TUBERCULOSIS SANITARIUM,** Champaign. Created by popular vote 1916. Site purchased. Free to residents of the county. For information, address Dr. C. B. Johnson, Champaign.

COOK COUNTY.—**THE MUNICIPAL TUBERCULOSIS SANITARIUM OF THE CITY OF CHICAGO,** Bryn Mawr and Crawford Avenues, Chicago. Free to residents of the City of Chicago. No other patients received.

THE TUBERCULOSIS DEPARTMENT OF COOK COUNTY HOSPITAL, Lincoln Street near Harrison, Chicago. For the treatment of advanced cases. Free to residents of Cook County. No other patients received.

THE COOK COUNTY TUBERCULOSIS HOSPITAL, Oak Forest. For the treatment of incipient and advanced cases. Free to residents of Cook County. No other patients received.

LA SALLE COUNTY.—**THE LA SALLE TUBERCULOSIS SANITARIUM,** Ottawa. To be opened by January first 1919. Free to residents of the county. For information, apply to Dr. K. W. Leland, Utica.

LIVINGSTON COUNTY.—**THE LIVINGSTON COUNTY TUBERCULOSIS SANITARIUM,** Pontiac. Under construction. Free to residents of the county. For information, apply to Dr. Jas. M. Mitchell, Pontiac.

McLEAN COUNTY.—**THE McLEAN COUNTY TUBERCULOSIS SANITARIUM,** Bloomington. To be opened early in 1919. Free to residents of the county. For information, apply to Mrs. Jacob A. Bohrer, Bloomington.

MORGAN COUNTY.—**THE MORGAN COUNTY TUBERCULOSIS SANITARIUM,** Jacksonville. Under construction. Free to residents of the county. For information, apply to Dr. Grace Dewey, Jacksonville.

OGLE COUNTY.—THE OGLE COUNTY TUBERCULOSIS SANITARIUM. Created by popular vote 1916. Maintains no sanitarium, but the Board of Trustees provide for residents of the county in other institutions. For information, apply to Dr. L. A. Beard, Polo.

PEORIA COUNTY.—THE PEORIA MUNICIPAL TUBERCULOSIS SANITARIUM, Peoria. Free to residents of the city of Peoria. Apply to Superintendent.

ROCK ISLAND COUNTY.—THE ROCK ISLAND MUNICIPAL TUBERCULOSIS SANITARIUM, Rock Island. Free to residents of the city of Rock Island. For information, apply to the Superintendent.

WINNEBAGO COUNTY.—THE ROCKFORD MUNICIPAL TUBERCULOSIS SANITARIUM, Rockford. Free to residents of the city of Rockford. For information, apply to the Superintendent.

PRIVATE SANATORIA.

COOK COUNTY.—THE CHICAGO FRESH AIR HOSPITAL, 7258 Northwestern Avenue, Chicago. For the care and treatment of tuberculosis in all stages. Dr. Ethan Allen Gray, Medical Superintendent.

THE HOME FOR INCURABLES—TUBERCULOSIS DEPARTMENT. Ellis Avenue and 57th Street, Chicago. For the treatment of advanced cases. For admission, apply to Mr. H. M. Higginbotham, First National Bank Building, Chicago.

THE HOME FOR DESTITUTE CRIPPLED CHILDREN—TUBERCULOSIS DEPARTMENT, 1653 Park Avenue, Chicago. Admission free for children from two to twelve years of age. Apply to the Superintendent.

THE JEWISH CONSUMPTIVE RELIEF SOCIETY OF CHICAGO, Belmont and 50th Avenues. For Advanced cases. Apply to the Superintendent.

DUPAGE COUNTY.—THE CHICAGO-WINFIELD TUBERCULOSIS SANATORIUM, Winfield. For incipient and moderately advanced cases. Has both free and pay beds. Dr. Max Biesenthal, Medical Superintendent.

THE EDWARD SANATORIUM, Naperville. For the treatment of early tuberculosis. Apply to the Chicago Tuberculosis Institute, 8 South Dearborn Street, Chicago.

LASALLE COUNTY.—THE OTTAWA TUBERCULOSIS COLONY, Ottawa. For the treatment of medical and surgical tuberculosis. Dr. J. W. Pettit, Medical Director. Apply to Medical Director.

MADISON COUNTY.—THE HARRISON TUBERCULOSIS COLONY, Collinsville. Receives patients in all stages. Dr. M. W. Harrison, Medical Superintendent. Apply to Superintendent.

RICHLAND COUNTY.—OLNEY SANITARIUM, Olney. Receives a very limited number of tuberculous patients. Apply to Dr. Geo. T. Weber, Medical Superintendent.

SANGAMON COUNTY.—THE SPRINGFIELD OPEN AIR COLONY, Springfield. For early cases of tuberculosis. Dr. George Thomas Palmer, Medical Director; Dr. Wilson Ruffin Abbott, Associate Director. Apply to the Associate Director, 628 East Capitol Avenue, Springfield.

FREE TUBERCULOSIS DISPENSARIES.

CHAMPAIGN COUNTY.—The Dispensary of the Champaign County Tuberculosis League, Champaign.

COOK COUNTY.—Dispensaries of the Chicago Municipal Tuberculosis Sanatorium.

CENTRAL FREE DISPENSARY, 1744 West Harrison Street.

CHICAGO POLYCLINIC, 221 West Chicago Avenue.

POST-GRADUATE HOSPITAL DISPENSARY, 2400 Dearborn Street.

PROVIDENT HOSPITAL DISPENSARY, 57 West 36th Street.

NORTH WEST DISPENSARY, Blackhawk Street and North Ashland Ave.

SOUTH WEST DISPENSARY, 2406 West Twenty-Second Street.

STOCK YARDS FREE DISPENSARY, 738 West Forty-seventh Street.

WEST SIDE DISPENSARY (Jewish Aid Society), Corner Maxwell and Miller Streets.

GRAND CROSSING DISPENSARY, 942 East Seventy-fifth Street.

SOUTH SIDE DISPENSARY, 2950 Calumet Avenue.

McLEAN COUNTY.—The Dispensary of the McLean County Tuberculosis Association, Bloomington. Dr. Bernice Curry, Bloomington, Attending Physician.

MACON COUNTY.—The Dispensary of the Macon County Tuberculosis Association, Decatur. Dr. Cecil M. Jack, Attending Physician.

MORGAN COUNTY.—The Dispensary of the Morgan County Tuberculosis Sanitarium, Jacksonville. Dr. Charles E. Cole, Attending Physician.

OGLE COUNTY.—The Dispensaries of the Ogle County Tuberculosis Sanitarium. Traveling dispensaries at different points in the county. For information, address Dr. L. A. Beard, Polo.

SANGAMON COUNTY.—The Dispensary of the Springfield Tuberculosis Association, Springfield. Drs. George Thomas Palmer, and Wilson Ruffin Abbott, Attending Physicians.

STEPHENSON COUNTY.—The Dispensary of the Stephenson County Tuberculosis Association at Freeport, Dr. A. E. Smith, Freeport, Attending Physician.

WINNEBAGO COUNTY.—The Dispensary of the Rockford Municipal Tuberculosis Sanatorium, Rockford. Dr. John Howard Maloney, Attending Physician.